means at the second relay for receiving said data packet, verifying the validity of said data packet, obtaining the transmitted output bits from said data packet and then utilizing said obtained output bits as input bits in its own fault determination calculation process.

REMARKS

Reconsideration of the application as amended is respectfully requested.

In the action of August 21, 1997, the examiner withdrew the finality of the previous office action and the previous indication of allowability of claims 1-7; and rejected claims 1-7 as anticipated by Sun et al.

Applicants have carefully studied the newly applied Sun reference. Sun is a classic example of the prior art involving communication between two relays using output contacts. If the result of the fault determining process in the first relay is that a fault has occurred, the signal (output bits) resulting from that process is used to set selected output contacts in that relay to a particular state. The state of those output contacts is monitored by communication equipment in the first relay and communicated to the second relay. The output contacts are a critical part of the communication structure between the two relays. The use of output contacts is discussed in several places in Sun. No alternative structure is suggested. Note that in Sun, data from the output contacts is sent to a master (a polling function), which uses this information to determine whether or not it should retrieve additional data. The resulting historical information may later be used to make a post-fault location calculation, long after a fault determination has been made.

In the present invention, on the other hand, the setting of output contacts by the relay output bits and the monitoring of the output contacts is eliminated. The output bits are instead arranged into a data packet and the data packet is then transmitted over a communications channel to the second relay, where the data packet is verified and utilized in its own evaluation process. In applicants' invention, communication of the actual data can be made in real-time, enabling two relays to share information for real-time fault evaluation and trip determination by both relays.

Claim 1 has been modified to clarify this difference. Specifically, in addition to the limitation of the control bits being

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arranged into a data packet and directly transmitted to the second relay (which defines applicants' invention over Sun), therefore bypassing output contacts and the related communications equipment, the claim specifically states, for further clarification, that the output bits (which is the signal result of the fault determination process) produced in the first relay are communicated to the second relay without the use of output contacts in the first relay. Claim 1 thus emphasizes and clearly sets forth the key feature of applicants' invention, which is the direct communication of the output bits in the form of data packets from a first relay to a second relay, as opposed to the output bits being used to control the state of output contacts in the first relay, which must be monitored by communications equipment in the system and then communication to the second relay.

The advantages of applicants' invention have been discussed both in the specification and in the prior amendment of July 10, 1997. A substantial number of specific elements in the prior art system are eliminated, while at the same time applicants' invention is faster and more accurate. This is critical to real-time fault determination within the system. Fewer errors occur with applicants' system.

In view of the above, claim 1 is patentable over the newly cited Sun reference; further, claim 2-7, being dependent upon claim 1, are also patentable.

Allowance of the application is thus again respectfully requested.

This is to request an extension of time of one month. Enclosed is the required fee in the amount of $55. Any additional fees can be charged to Deposit Account No. 07-1900.

Respectfully submitted,

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